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Superphosphate Factory in Riga

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1. The superphosphate factory in Riga is controlled by the Ministry for Local Industries of the Latvian SSR. The factory existed before the war and produced superphosphate fertilizer for Latvian agricultural purposes. At the time of the departure of the Germans, the factory buildings were not blown up but much equipment and many installations were either destroyed or taken away. After the war, the Soviet Government resolved to rebuild the factory and to increase its output considerably. The reconstruction was completed at the end of 1946 and the factory then went into production on a very small scale. Production was limited because of the shortage of specialists, particularly those for the production of sulphuric acid. Delay in production lasted for several months; in fact, the beginning of production can be counted as March 1947.
2. Pyrite furnaces of "VKhZ" (Voskresensk Chemical Factory) type have been built at the factory. A new system of coolers for acids has been introduced, with a reduced normal limit ("norma") of cooling surface. Lead has been eliminated entirely from all equipment for the towers for the production of sulphuric acid by the substitution of Caucasian andesite as an acid-proof material.
Comment: This substitution for a critical material is noteworthy.) A centrifugal pump of a new type has been installed.
3. Production: In 1947, the factory produced about 90,000 tons of superphosphate. When working at full capacity, it should produce 180,000 - 190,000 tons per annum. However, the work of the factory in December 1947 and in January and February 1948 was very good; if it continues to be good throughout 1948, the factory will produce a considerably larger quantity in 1948, possibly 140,000 - 150,000 tons of superphosphate. In February 1948, the factory produced about 3,800 tons of sulphuric acid, with five pyrite furnaces in operation. The February 1948 production of superphosphate used about 130 tons of sulphuric acid to yield about 450 tons of superphosphate every 24 hours. Some mechanical defects occurred in the pumps, ventilators, and the pyrite furnaces.
4. Raw Materials: Sulphur pyrites for the production of sulphuric acid are brought from the town of Kirovograd (ex-Kalata) in Sverdlovsk Oblast. As raw material for the production of superphosphate, the

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factory uses Khibin apatite concentrate from the flotation plant of the Khibin Apatite Combine at Khibin, on the Kola Peninsula. This flotation concentrate contains 35 - 40% of P_2O_5 . Nitric acid ("melanzh" = melange) is received from various chemical factories in the USSR. The first consignments came from factories in Central Russia. Caucasian andesite was and still is being received from the Arsha village area on the Georgian Military Road, in the Mount Kazbek area, 50 kms. from the town of Dzardzhikau (ex-Ordzhonikidze, ex-Vladikavkaz) (43°02'N, 44°41'E).

5. Plans: In the near future, it is intended to produce tricalcium phosphate on a commercial scale at the factory by means of the elimination of fluoride from superphosphate. Tricalcium is used as fodder. Apatite has a considerable content of fluoride which must be eliminated; the method of elimination has been worked out by the Scientific Research Institute for Fertilizers and Insecto-Fungicides (Nauchno-Issledovatel'ski Institut po Udobreniyam i Insektofungisidam or NIUIF). Fluoride is eliminated by heating superphosphate to a high temperature in a flow of water steam.

6. Personnel: The factory director is V. N. Izvekov, who holds the degree of candidate of technical sciences. [] estimates the total number of personnel at the factory as about 900 men.

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